Attorney Docket: 41482-25424
Serial No. 09/978602

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Kenneth Solomon
Reg. No. 31,427

In re application of: Vandersall et al.	:	
Serial No.: 09/978,602	:	Examiner Cephia Toomer
Filed: October 16, 2001	:	Group Art Unit 1714
For: FIRE RETARDANT COMPOSITIONS WITH REDUCED ALUMINUM CORROSIVITY	:	

BOX RESPONSE – NO FEE
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

RESPONSE B

This is in response to the Office Action dated June 18, 2003.

Remarks

Favorable reconsideration is respectfully requested of the rejection of claims 1-6, 8-14, 16-18, 22-24, 26-33, 35-37, 41-47, 49-55, 57-58, 62-64, 66-72, and 74-75 as being obvious

over the Nelson patent (U.S. patent 3,730,890) in view of the Crouch patent (U.S. patent 6,019,176) and the Strickland patent (U.S. patent 4,822,524) and the Achtmann patent (U.S. patent 5,882,541). In response to the previous Action, Applicant had distinguished the claims from the Nelson, Crouch and Strickland patents by pointing out that none of them calls for a biopolymer of particle size less than 100 microns as required by all pending claims. According to the subject Action, the Achtmann patent has been added for its teaching of a biopolymer (xanthan gum) of such polymer size (that is, under 100 microns). The Achtmann patent, however, states that xanthan gum of particle size in the range of 50 to 250 mesh, which according ot the Office Aciton corresponds to 60-300 microns, can be used in a fire extinguishing foam. Therefore, the Achtmann patent suffers from at least two deficiencies.

First, a teaching of particles being in the range of 60 to 300 microns does not establish or even suggest that ANY particles of diameter under 100 microns were used, let alone that their *weight average particle diameter* is under 100 microns as required by the claims. Thus, the Achtmann patent does not teach any significance of maintaining the particle size under 100 microns. That the particles MAY be less than 100 microns is not a teaching or suggestion that they BE under 100 microns.

Second, the Achtmann patent is directed to foam fire extinguishers, which differ dramatically in mode of application and the mechanism by which they function from the compositions of the Nelson, Crouch and Strickland patents, as well as the retardants of the subject claims. Teachings with respect to such foam fire extinguishers as are addressed by Achtmann are not be applicable to the type of fire retardant disclosed in the other cited patents or the subject claims. The subject matter of the Achtmann patent is a biodegradable foam concentrate for use in extinguishing and controlling fire in Class B fuels (liquid hydrocarbons).

Such foam concentrates are clear liquids containing surfactants, a film forming water-soluble polymer and a number of solvents (including water). The solvents are used primarily to obtain a clear concentrated liquid with a viscosity low enough so that it flows, is miscible with water and can be pumped. These products, usually referred to as AFFF (aqueous film forming foam) or AR-AFFF (alcohol resistant-AFFF), generally contain at least one non-biodegradable fluorinated surfactant. Fluorinated surfactants are under environmental scrutiny since the discovery that their fluorinated surfactants are absorbed through the skin and are bio-accumulative. Accoridngly, the Achtmann patent represents efforts of Class B fire-fighting foam manufacturers to develop effective and biodegradable Class B foams.

In use, Class B foam concentrates are diluted with water to prepare a solution containing 3 to 6% of the concentrate. The fluorinated surfactant mixture generally used in these products is capable of reducing the surface tension of water from about 78 to 15-18 dynes/cm^2. When applied from an aerating nozzle, this results in the formation of a thick layer of bubbles on the surface of a hydrocarbon. This low-density, water-containing foam extinguishes flaming hydrocarbon liquids and then floats on the surface forming a thick insulative blanket between the fuel and oxygen. The foam blanket remains on the surface long enough for the fuel to cool below its ignition temperature. The water-soluble polymer included in such products forms a film at the interface between the flammable liquid and the aqueous foam. This film improves the ability of the aqueous foam blanket to float on the lower density hydrocarbon liquids and improves the ability of the foam to 'heal' or close-over if it is disrupted so that a continuous blanket is maintained. Therefore, the water-soluble polymers used in fire-fighting foams are selected because they form a continuous film at the interface between hydrocarbon liquids and the aqueous foam, not because they are effective thickening

agents for the aqueous foam solution. In fact, any increase in viscosity derived from a water-soluble-polymer would be undesirable because it would increase the viscosity of the foam concentrate so that it would be more difficult to pour, pump and mix with water. Thus, teachings with respect to such fire-extinguishers as addressed by Achtmann are unrelated and would be considered inapplicable to the aerially-applied retardants of Nelson, Crouch and Strickland.

Moreover, the compositions of the subject claims use a water-soluble polymer (xanthan) of particle size under 100 microns that can be incorporated into a concentrated high ionic strength ammonium phosphate based fire retardant solution and stored therein for long periods of time before dilution to use concentration. During storage in the concentrated form, the small polymer particles are suspended in the high ionic strength solution as discrete particles. Then, upon dilution, the polymer hydrates and the viscosity of the resultant solution increases to provide improved aerial drop characteristics when the fire retardant solution is discharged from an aircraft flying over the target area. This is true, even when dilution occurs more than a year after preparation of the original concentrated fire retardant. Water-soluble polymers with larger weight average particle sizes were found incapable of functioning in this manner after being subjected to storage in the high ionic strength fire retardant solution for more than a short time (hours to days). None of the art of record ever recognizes or suggests this surprising advantage of the use of such small polymer particles.

Accordingly, the Nelson, Crouch, Strickland and Achtmann patents, whether considered individually or in combination, do not teach or suggest the combination called for in the subject claims or the surprising advantages discovered to result from that combination. Thus, it is submitted that each of the subject claims define patentably over those references.

Favorable reconsideration also is respectfully requested of the rejection of claims 1-6, 8-14, 16-18, 22-24, 26-33, 35-37, 41-47, 49-55, 57-58, 62-64, 66-72, and 74-75 as being obvious over European patent document 693304 in view of the Strickland patent. It is believed that this rejection has been left in the Action in error. As had been pointed out in the previous response, neither reference discloses or suggests a biopolymer particle size of less than 100 microns as required by the claims. As pointed out above, such small particles of polymer impart surprising advantages to the compositions of the claims. Although this point of distinction and claim element was pointed out previously, are ignored in the Action. The need for a reference directed to the particle size was recognized in the rejection discussed above and so it is believed that the present rejection was asserted in error and that when this element is considered as required by law, the Examiner will agree that the subject claims define patentably over the subject references.

Reconsideration also is respectfully requested of the provisional double-patenting rejeciton based on U.S. patent application serial no. 09/978,401. In the original presentation of this rejection, the rejection had been based on the assertion that the claims of the present invention "encompass" those of the cited application. In response, applicant had pointed out that the present claims do not "encompass" the earlier ones because the present claims require a corrosion inhibitor, while the earlier ones do not. Therefore, the earlier claims are broader and cannot be "encompassed" by narrower claims of the present application. Moreover, there is no teaching or suggestion in the earlier application to use a corrosion inhibitor and so the Examiner has not established that present claims are obvious over the earlier claims. The present Action argues that because the earlier claims are open-ended, no additional component can render a composition patentable over the earlier claims. Of course, this is is not the law –it

would mean that a reference to "a composition containing carbon" would prevent the issuance of any patent would ever again for an organic composition. And, it would mean that no patent could issue for another composition containing the ingredients identified in the claims of the '401 application, no matter how many novel, nonobvious compounds are added to it. The argument is backwards. A species anticipates a genus; not the other way around. Accordingly, for the reasons set forth in the previous response, the current claims define over those of the '401 application. Thus, it is submitted that the provisional double-patenting rejection should be withdrawn.

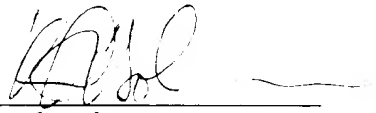
Claims 7, 25, 38-40, 48, 59-61, 65, and 76-78 have been indicated as being allowable except for depending from a rejected base claim. Because the base claims are allowable, it is submitted that the noted claims are in allowable condition. Accordingly, withdrawal of the objections to the noted claims is respectfully requested.

Conclusion

In view of the foregoing, favorable reconsideration and early allowance of all pending claims are earnestly solicited.

Respectfully submitted,

THOMPSON COBURN LLP
By:



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